

**Supplemental material 3. Table of characteristics of included studies.**

SN	Article ID, Country affiliation	Country Addressed	Aim	Name of Framework	Application	Development method	Problem/Focus
1	Campbell 2013a Spain	Resource constrained settings in any country.	The paper reviews the available literature on the impact of HRH policy to identify the key actions and lessons that support accelerated progress towards UHC, with special attention to “effective coverage” and equity.	Dimensions of universal health coverage (UHC) pertaining to human resources for health (HRH): effective coverage/ AAAQ dimensions of health workforce	Applied to guide a process-tracing analysis of HRH policy actions	Theoretical development-Modified based on the UHC cube model– integrating Tanahashi’s health coverage model and the right to health– to characterize the dimensions of effective coverage: availability, accessibility, acceptability, utilization and quality.	The challenge of addressing the three dimensions of UHC through continuing political commitment and leadership to distribute available resources, especially human resources for health (HRH), in an efficient, equitable and sustainable manner to match population needs in every country giving the resource constraints.
2	Campbell 2013b Spain	Any country	To provide a framework that answers the questions on what health workforce is required to ensure effective coverage of an agreed package of health care benefits, what health workforce is required to progressively expand coverage over time and how does a country produce, deploy and sustain a health workforce that is both fit for purpose and fit to practice in support of universal health coverage.	Not clearly stated	Only framework Non-systematic review	Theoretical	Health services are only as effective as the persons(health workers) responsible for delivering them and more health workers will be needed to achieve the goals of the universal health coverage
3	Dieleman 2009  Netherlands	LMIC	The objective of this report is to describe experiences and to provide lessons learnt with respect to interventions to retain staff and to improve their productivity, competence and responsiveness.	Framework to address performance	Provided framework with examples	Using a mixed method	The field of performance of health workers are complicated and there is need for evidence on HRM interventions to improve Health workers performance in LMICs under different context.
4	Fujita 2011 Japan	LMIC	The purpose of this paper is to present a comprehensive, engaging, and visible framework of HRH system development.	Human resources for health system development: analytical framework—the “house model”	Provided framework with examples	Mixed method	Unavailability of meaningful, comprehensive, and visual framework that is easy to understand and identifies key components of the human resources system for post conflict area.

SN	Article ID, Country affiliation	Country Addressed	Aim	Name of Framework	Application	Development method	Problem/Focus
5	Gross 2012 Switzerland	Not specified	Develop the concept of workhood to capture and explore health workers' access to work resources and their capacities to mobilize and transform them. Secondly, to illustrate and evaluate this theoretical concept with empirical data from four case studies, and thirdly, to discuss the usefulness and limits of the concept.	Expanded Health access Livelihood Framework by workhood	Provided framework with examples	Mixed method	Research of health workers' resources and capacities has not yet been well investigated
6	Huicho 2010 Peru	Any country	To provide a framework to guide managers, policymakers and evaluators in the assessment of interventions to increase access to health workers in underserved areas.	The conceptual framework for measuring efforts to increase access to health workers in underserved areas.	Provided only framework	Mixed method	Mal-distribution of health personnel to rural and remote area in LMICs; severe shortage of health personnel in LMIC; access to health workers in underserved areas is challenging
7	Jacob 2020 India	India	To test an integrated model of these three aspects of hospital care. It also aimed to understand the impact of HR management practices on the performance-related outcomes of private hospital employees.	The integrated causal model human resource	Provided framework with example	Mixed method	Research exploring the relationship between HR management practices, outcomes and quality of services has been inadequate especially for hospital based health workers.
8	Joint Learning Initiative* 2004	Any country	The aim is to produce a framework for landscaping human resources for health and in identifying strategies to strengthen the health workforce.	Managing for performance	Provided framework	Mixed method strategies.	Human resources for health was neglected and overlooked as a critical resource for the performance of health systems.
9	Kurniati 2015 Indonesia	Indonesia	This paper provides a state of the art review of the existing conditions pertaining to HRH in Indonesia, innovations to tackle the problems, results of the innovations to date, and a picture of the on-going challenges that have yet to be met.	Framework for roadmap of HRH development to support Universal Health Coverage.	Provided framework	Mixed	How to address the HRH challenges in Indonesia.

SN	Article ID, Country affiliation	Country Addressed	Aim	Name of Framework	Application	Development method	Problem/Focus
10	Lehmann 2008 South Africa	Mid and low income countries (MLICS)	The paper reviews the available literature on the impact of HRH policy to identify the key actions and lessons that support accelerated progress towards UHC, with special attention to “effective coverage” and equity.  This is a study focused on exploring and linking attraction and retention factors of health staff to rural areas and strategies to improve attraction and retention in LMICs	Not clearly stated	Provided framework with examples	Theoretical conceptualization	Mal-distribution of health personnel to rural and remote area in LMICs; severe shortage of health personnel in LMIC.
11	Lohmann 2019 United Kingdom	Malawi	This study aims to contribute to filling the gap in knowledge on evidence of levels of psychological wellbeing and factors associated with it among mid-level cadre health workers in rural Malawi.	Not clearly stated	Provided framework with example	Theoretical conceptualization	Inadequate framework that can be used to develop and implement strategies to achieve an effective and sustainable health workforce. There is a particular lack of studies investigating factors associated with psychological wellbeing beyond basic demographic characteristics.
12	Mathauer 2006 Germany	Developing Countries	To address is the dearth of evidence in what can be done to strengthen health worker motivation in the context of addressing HRH challenges through HRM especially in LMICs.	Motivational determinants and processes Framework	Provided framework with example	Mixed methods	Human resource challenges and motivation of health workers is a challenge
13	MSH* 2009	Any country	To agree on a simple but comprehensive technical framework to assist governments and health managers to develop and implement a comprehensive HRH strategies to achieve an effective and sustainable health workforce	Human Resource for Health Action Framework	Provided framework with examples	Mixed methods	How to comprehensively address staff shortages, uneven distribution of staff, gaps in skills and competencies, low retention and poor motivation, among other challenges.
14	Raven 2015 United Kingdom	LMIC	use rapid country case studies to explore the current use of practices for attraction, retention and performance management of CHWs in five African countries	Not clearly stated	Provided framework with examples	Theoretical conceptualization	There is a need to build a picture of the range of human resource management practices currently used, how they are implemented and their reported effects on human resources, from the perspectives of the three sets of management actors and the CHWs themselves. Health managers need more information on what kind of management practices (including the use of incentives) tend to work best both to attract and retain volunteer CHWs and to manage their performance.

SN	Article ID, Country affiliation	Country Addressed	Aim	Name of Framework	Application	Development method	Problem/Focus
15	Roome 2014 United Kingdom	LMIC	Synthesise the global evidence of HRM human resource management (HRM) in post-conflict health systems.	Not clearly stated	Provided framework with examples	Mixed method	Decisions related to the management and development of the health workforce are critical, but challenging to new or transitional governments – especially those of fragile states, e.g. post-conflict areas. Absence of synthesis of published research on HRM in post-conflict health systems in the past decade.
16	Sousa 2013 Switzerland	Any country	The framework is meant to provide a comprehensive picture of health labour market dynamics and of the contributions of four groups of health workforce policies to the attainment of equitable access to quality health services and UHC.	The health labour market framework	Provided framework	Theoretical conceptualization	Health workforce policies that are partial rather than comprehensive, such as those that focus on education, are not effective in addressing health workforce shortages and ensuring equitable access to health services for a country's entire population hence the need for a more comprehensive one.
17	WHO* 2006	Any country	To provide interventions for all health workers irrespective of whether they are providing clinical care or not for enhancing workforce performance.	Working Lifespan strategies	Provided framework	Not clearly stated	There is enormous challenges facing the health workforce. Health workforce performance is critical because it has an immediate impact on health service delivery and ultimately on population health.

\* Organisation based report and hence not essentially country based.